

REMARKS

Claims 8, 9, 17, 18 and 20-23 have been cancelled without prejudice. Claims 1, 2, 15 and 24 have been amended. Claims 1-7, 10-16, 19 and 24 remain before the Examiner for reconsideration.

In the Office Action, the Examiner rejected claims 1 - 23 under 35 U.S.C. 112, second paragraph, "as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention". Specifically, the Examiner pointed out that:

The term "flexible" in claim 1 is a relative term which renders the claim indefinite. The term "flexible" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The Examiner will interpret "flexible" to mean a material that is capable of being bent with minimal effort such as a material in the form of a film.

The term "strong" in claim 2 is a relative term which renders the claim indefinite. The term "strong" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The Examiner will interpret "strong" to mean having reasonable strength to maintain the integrity of the invention throughout its normal use.

The term "hard" in claim 12 and 14 is a relative term which renders the claim indefinite. The term "hard" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The Examiner will interpret "hard" to mean having tough surface such as a resin laminated material or containing fibers which are high in strength.

Applicant has amended claim 2 to obviate the Examiner objection to the term "strong" as used in the original claim 2. Applicant respectfully asserts that Claim 2, as amended, fully complies with the requirements of Section 112.

With respect to the use of the term "flexible" as used in claim 1, Applicant respectfully traverses the Examiner's rejection. In that regard, Applicant has used the term "flexible" in its ordinary dictionary meaning as "able to be bent or flexed." See, e.g., Webster's II New Riverside Dictionary Revised Edition, Haughton Mifflin Company, Boston Massachusetts (1996). One of ordinary skill in the art is thus clearly apprised of the scope of the invention.

With respect to use of the term "hard" in claims 12 and 14, Applicant respectfully asserts that the term "hard" is a well known term of art in the finishes industry and is defined in the specification on page 9 as follows:

As used herein (and generally in the paper and/or fabric industry), the terms "hard" or "hard-pressed" in reference to a finish refer generally to a calendar, flat, smooth, dense, hot press, tightly-woven, finish. Materials with a hard finish will not totally absorb a bonding medium such as acrylic polymer medium and thus allow some of the bonding medium solution to stay on the surface of the material to bond with another layer of material.

Claims 1 - 24 are rejected by the Examiner under 35 U.S.C. 102(b) "as being anticipated by Takahashi et al. (US 5,928,778)". Specifically, the Examiner assured that:

Takahashi teaches a decorative material which is excellent in flexibility and abrasion resistance (Abstract). The decorative material of this invention can be used for various purposes such as decorating surfaces of buildings, vehicles, ships, furniture, musical instruments, cabinets and decorating wrapping materials (column 11, lines 50 - 55).

As to claims 1, 15 and 24, Takahashi teaches a material including a substrate and an abrasion resistant coating layer. The abrasion resistant coating layer includes spherical particles and binder. (Abstract) The spherical particles can be beads of a synthetic resin such as a crosslinked acrylic resin (column 4, lines 34 - 36). The binder can be any conventionally known thermosetting resins such as a polyfunctional meth(acrylate), which is a derivative of acrylic (column 6, lines 1 - 5). Therefore, in one embodiment, the abrasion resistant coating layer can consist entirely of acrylic or acrylic derivatives. This layer can function as the Applicant's "outer protective layer".

Takahashi teaches that substrate can be a paper, plastic film or sheet, or metallic foil or plate (column 1, lines 66 - 67). It is preferable to use a flexible material as the substrate (column 2, line 5). Takashi teaches that the substrate can be a composite substrate which can be obtained by laminating two or more substrates by any known means, for instance, by the use of an adhesive agent, or by effecting thermal fusion (column 2, lines 66 - 67 and column 3, lines 1 - 3). Takahashi teaches that substrate can be a paper, plastic film or sheet, or metallic foil or plate (column 1, lines 66 - 67). Examples of the types of paper are tissue paper, craft paper, titanium paper, linter paper, cardboard, plasterboard paper, raw fabric of so-called vinyl wall paper, high-grade paper, coated paper, art paper, vegetable parchment, glassine paper, animal parchment, paraffin paper and Japanese paper. In addition, paper-like sheets can be used as the substrate such as woven or nonwoven fabrics produced from inorganic fibers such as glass fiber, alumina fiber, silica fiber and carbon fiber or organic fibers such as polyester of Vinylon (column 2, lines 15 - 27). A plastic sheet can be used as a substrate in the form of an acrylic film (column 2, lines 36-37). Due to the fact that a composite substrate can be used, one embodiment of Takahashi teaches a "base material" bonded to an "inner protective layer" of a flexible material such as an acrylic film, a "bonding material" bonded to the second side of the base material, a "decorative layer" such as a paper or a paper-like sheet bonded to the "base material" and an "outer protective layer" of a flexible material such as the abrasion resistant coating layer made of acrylic or acrylic-derivatives taught by Takahashi.

As to claims 2 and 3, Takahashi teaches that the "base material" can be made out of a paper-like sheet such as a nonwoven comprising fibers such as carbon or alumina fibers (column 2, lines 21 - 26), which are known in the art to be high in strength.

As to claim 4, Takahashi teaches that the substrate can be a composite substrate which can be obtained by laminating two or more substrates, therefore, an additional paper-like layer such as a "woven backing" could be attached to the "base material".

As to claim 5, Takahashi teaches that the "inner protective layer" can be an acrylic film, which is inherently water resistant.

As to claim 6, Takahashi teaches that the "outer protective layer", or the abrasion resistant coating, can be comprised entirely of acrylic or acrylic derivatives, which are inherently water resistant.

As to claims 7 and 19, Takahashi teaches that the abrasion resistant coating can be transparent or translucent (column 11, lines 47 - 49).

As to claims 8 and 20, Takahashi teaches that the "outer protective layer" can be comprised entirely of acrylic or acrylic derivatives (column 2, lines 1 - 67).

As to claims 9, 17 and 18, Takahashi teaches that the "inner protective layer", the "bonding material" and "outer protective layer" can be comprised of acrylic, which are inherently water-resistant (column 2, lines 1 - 67).

As to claims 10, 11 and 16, Takahashi teaches that the "decorative layer" can be comprised of paper. Vegetable parchment paper among other papers (column 2, lines 14 - 26) typically has a textured finish and can have a generally random wrinkled pattern. Takahashi also notes that is possible to use a substrate having a rough or three-dimensional pattern (column 2, lines 9 - 14).

As to claim 12, Takahashi teaches that the "decorative layer" can be a board such as veneer (column 2, lines 45 - 50), which has a hard finish.

As to claim 13, Takahashi teaches that the "decorative layer" can be a paper such as vegetable parchment paper (column 2, lines 14 - 26), which has a smooth or calendared finish

As to claim 14, Takahashi teaches that the "decorative layer" can be a paper-like material such as a woven fabric comprising alumina and carbon fibers (column 2, lines 21 - 27). A paper-like material implies a smooth or semi-smooth surface, therefore, the woven fabric would have to be woven tightly to give a smooth appearance. The "decorative layer" would have a hard finish due to fiber content of high strength rigid fibers.

As to claims 21 - 23, Takahashi teaches that the flexible, waterproof materials known as the "bonding material" and "inner protective layer" and the "outer protective layer" comprise a polymeric medium. If the composite substrate is

thermal fused together (column 3, line 3), the polymeric layers will melt to an aqueous form before laminating the substrates together.

Applicant respectfully traverse the Examiner's rejection.

Takahashi et al. discloses a decorative material having a relatively high abrasion resistance to make it useful for various purposes including "decorating the surfaces of buildings, vehicles, ships, furnitures, musical instruments, cabinets and the like, and also for decorating wrapping materials." Col. 11, lines 50-57. To achieve the high abrasion resistance the material of Takahashi et al. includes an "abrasion-resistant" coating formed on a substrate. The abrasion-resistant coating includes spherical inorganic particles having a defined particle diameter and hardness and a binder material including a crosslinkable resin. The crosslinkable resin can be a thermosetting resin such as a two-pack urethane resin, an epoxy resin, an alkyd resin or an unsaturated polyester resin. Col. 5, lines 42-45. The crosslinkable resin of Takahashi et al. is preferably, however, an ionizing radiation-curing resin (cured via irradiation with ionizing energy) such as "unsaturated polyester resin, compounds having (meth)acryloyl group [monofunctional (meth)acrylate, polyfunctional (meth)acrylate, urethane (meth)acrylate, polyester (meth)acrylate, epoxy (meth)acrylate, etc.], vinyl compounds [styrene, divinylbenzene, etc.], allyl compounds [diallylphthalate, etc.], and mixtures of two or more of these compounds." Col. 6, lines 1-7.

Thus, unlike, the bonding/binding layer and outer layer materials of the present invention, which are formed from an aqueous acrylic polymer dispersion medium, the polyfunctional meth(acrylate) (erroneously indicated by the Examiner to be a thermosetting resin) of Takahashi et al. is an ionizing-radiation-curing resin. Unlike the resins of Takahashi et al., the aqueous acrylic polymer dispersion media of the present invention are very safe materials that are quite easy to work with – generally applied as a wet aqueous dispersion and allowed to dry. Indeed, such media are commercially available as artists' media. Such materials would be unusable in the articles of Takahashi et al. as they would likely not supply the required abrasion resistance, even upon addition of spherical inorganic particles (which are absent in the present invention). Unlike, the

materials of Takahashi et al., the composite materials of the present invention can be used in the manner of traditional fabrics. Likewise, and unlike the materials of Takahashi et al., the composite materials of the present invention are equally well suited for commercial mass production or for home production/use by individuals.

Moreover, the teaching in Takahashi et al. that the substrate thereof can be a composite substrate which can be obtained by laminating two or more of the various substrates listed in Takahashi et al. does not disclose or suggest the composite material of the present invention in which at least one layer of base material has on a first side thereof at least one inner protective layer of a flexible material including an aqueous acrylic polymer dispersion medium, and in which at least one decorative layer is bonded to base material on the other side thereof using an aqueous acrylic polymer dispersion medium.

In view of the above and remarks, the Applicants respectfully requests that the Examiner withdraw rejection of the claims set forth in the Office Action of December 19, 2002, indicate the allowability of these claims and arrange for an official Notice of Allowance to be issued in due course.

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